UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/825,218	04/03/2001	Nabil Nasr	1819/100171	9814

7590 12/04/2006

Gunnar G. Leinberg, Esq.
NIXON PEABODY LLP
P.O. BOX 31051
Clinton Square
Rochester, NY 14603

EXAMINER	
GUILL, RUSSELL L	

ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/825,218	NASR ET AL.	
	Examiner	Art Unit	
	Russ Guill	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-115* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-115* is/are rejected.

7)☒ Claim(s) *23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 July 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to an Amendment filed October 5, 2006.

2. Claims 110 - 115 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

3. Claims 110 - 115 were added. No claims were canceled. Claims 1 - 115 are pending. Claims 1 - 115 have been examined. Claims 1 - 115 have been rejected.

4. **As recited previously, the Examiner would like to thank the Applicant for the very well presented response, which was useful in the examination process. The Examiner appreciates the effort to perform a thorough analysis of the Office Action, and make appropriate arguments and amendments.**

Continued Examination Under 37 CFR 1.114

5. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 5, 2006 has been entered.

Response to Remarks

6. Regarding **claims 69 and 95** that were objected to for minor informalities:
   6.1. Applicant's amendments overcome the objections.

7. Regarding **independent claims 1, 59 and 98** rejected under 35 USC § 101:
   7.1.1. Applicant's amendments to the claims overcome the rejections.

8. Regarding **independent claims 21 and 101** rejected under 35 USC § 101:

8.1.1. Applicant's amendments to the claims overcome the rejections.

9. Regarding **independent claims 1, 21, 39, 59, 72 and 85** rejected under 35 USC § 103:

9.1. Applicant's arguments have been fully considered, but are not persuasive, as follows. Accordingly, the rejection is maintained.

9.2. The Applicant argues:

9.2.1. Watson, Onodera, Moore, Mi1Std1629A, Busch, and Lobley, alone or in combination, do not disclose or suggest, "assessing a plurality of remanufacturing options for each of the items based on the determined overall condition of the items regardless of a condition of each of the items" as recited in claims 1 and 39, "a remanufacturing assessment processing system in the at least one computing device that assesses a plurality of remanufacturing options for each of the items based on the determined overall condition of the items regardless of a condition of each of the items" as recited in claim 21, "assessing a plurality of remanufacturing options for each of the items regardless of the condition of each of the items" as recited in claims 59 and 85 and "a remanufacturing assessment system that assesses a plurality of remanufacturing options for each of the items regardless of the condition of each of the items" as recited in claim 72.

9.2.2. The Office has asserted, "Watson appears to evaluate and assess each item when an operator inspects an asset component. The operator obviously inspects all items of the component regardless of the condition of the items, both defective and non-defective, and at that time, they are obviously evaluated as part of a remanufacturing assessment procedure." However, the disclosure in Watson does not support the Office's assertion. The Office's attention is respectfully directed to col. 5, line 65 to col. 6, line 8, "To rate the condition of the asset component, the asset management system 100 utilizes a process of inspection of the asset component to determine various types of problems or "defects" associated with the component. In addition, levels of severity, indicative of the "extremeness" of the problem, are also determined. Further, the inspection process determines the extent of the size of the problem, relative to the overall size of the asset component. The foregoing data, in addition to other data generic to the asset component, is utilized with empirical information to determine serviceability

fore-casts related to the asset component" (Emphasis added). Accordingly, once the defects are determined, Watson only discloses evaluating based on those determined "defects" and generic data, i.e. information universally or generically applicable to that type of asset component and thus not related to the condition of that asset component. By way of example, further support that Watson is focused on only assessing the repair options with respect to the defects can be found at col. 7, lines 16-19; col. 8, lines 32-34 and 47-51; col. 18, lines 18-30; and col. 20, lines 45-50. Like Watson, the other cited references do not teach or suggest assessing a plurality of remanufacturing options for each of the items regardless of a condition of each of the items as claimed.

9.2.2.1. The Examiner respectfully replies:

9.2.2.2. The Examiner appreciates the Applicant's arguments, however, the Examiner respectfully disagrees, as follows. First, it would have been obvious that one type of problem category determined is "no problem", and one type of severity level determined is a level "zero severity". For example, figure 15 graphically illustrates a functional relationship of a deduct value, severity level and problem density for a given problem type. The curves appear to contain zero as an allowed value. Further, figure 17 is an illustrative output listing of a roof inventory. For problem type 5, it would have been obvious that the number of problems is zero. Further, it would have been obvious that one of the plurality of remanufacturing options is "no remanufacturing needed". Therefore, Watson appears to suggest assessing a plurality of remanufacturing options for each of the items regardless of a condition of each of the items as claimed.

10. Regarding **claims 3, 23 and 41** rejected under 35 USC § 103:

10.1. Applicant's arguments have been fully considered, but are not persuasive, as follows. Accordingly, the rejection is maintained.

10.2. The Applicant argues:

10.2.1. Additionally, Watson, Onodera, Moore, MilStd1629A, Busch, and Lobley, alone or in combination, do not disclose or suggest, "researching each of the items to obtain at least a portion of the data" as recited in claim 3, "wherein at least a portion of he obtained data is obtained by researching the items" as recited in claim 23, or "researching ~~each of~~ the items to obtain at least a portion of the data" as recited in claim 41. The Office has taken Official Notice that it was old and well known to the ordinary artisan at the time of invention to research data for an item and that

the motivation to combine would have been the need to obtain data needed to evaluate alternatives and make a decision regarding remanufacturing options.

10.2.2. Applicants respectfully traverse this Official Notice taken by the Office and respectfully request the Office to provide specific factual findings predicated to support the Office's conclusion of common knowledge. See *Soli*, 317 F.2d at 946, 37 USPQ at 801; *Chevenard*, 139 F.2d at 713, 60 USPQ at 241. Applicants acknowledge that generic researching of data is shown, however Applicants disagree that researching for obtained data to be used in determining an overall condition of items that is used for assessing a plurality of remanufacturing options is taught or suggested. Accordingly, the Office is respectfully requested to provide the specific factual findings for the claimed limitation and motivation to combine or to withdraw these rejections.

10.2.2.1. The Examiner respectfully replies:

10.2.2.2. The Examiner appreciates the Applicant's arguments, however, the Examiner respectfully disagrees, as follows. As recited above, the Applicants acknowledge that generic researching of data is shown; and the Examiner notes that this is all that is taken as Official Notice. Further, the motivation to combine can come from the knowledge of the ordinary artisan or the nature of the problem. The Examiner maintains that the motivation provided is sufficient, because as recited, the ordinary artisan would have been motivated by his knowledge and the nature of the problem to obtain data needed to evaluate alternatives and make a decision regarding remanufacturing options.

11. Regarding **claims 4, 23 and 42** rejected under 35 USC § 103:

11.1. Applicant's arguments have been fully considered, but are not persuasive, as follows. Accordingly, the rejection is maintained.

11.2. The Applicant argues:

11.3. Further, Watson, Onodera, Moore, MilStd1629A, Busch, and Lobley, alone or in combination, do not disclose or suggest, "determining what types of the obtained data need to be collected" as recited in claim 4, "a data determination system that determines what types of the obtained data need to be obtained" as recited in claim 23, or "determining what types of the obtained data need to be collected" as recited in claim as recited in claim 42. The Office asserts that Watson

discloses determining what types of the obtained data need to be collected at column 19, line 21 – 35 and that it would have been obvious that data, such as year constructed would have been researched, and the computer prompts for the required information to be collected. However, contrary to the Office's assertions column 19, lines 21-35 along with the other "prompts" disclosed in cols. 19 and 20 in Watson do not teach or suggest determining what types of data need to be collected. The portion cited by the Office in Watson simply states, "The central processing unit 106 can be utilized to "prompt" for such information (through a digital display device or similar visual display)", however prompting is simply inciting a request and there is no teaching or suggestion in Watson of any determining of what types of data need to be collected. Like Watson, the other cited references do not teach or suggest the claimed determining. Accordingly, in view of the foregoing amendments and remarks, the Office is respectfully requested to reconsider and withdraw the rejection of claims 4, 23, and 42.

11.3.1.1. The Examiner respectfully replies:

11.3.1.2. The Examiner appreciates the Applicant's arguments, however, the Examiner respectfully disagrees, as follows. Watson appears to suggest determining what types of data need to be collected because, in order for the computer to prompt for the data, it would have been obvious that it was previously necessary for Watson to determine the types of data needed to prompt for.

12. Regarding **claims 12, 30, 50, 67, 80 and 93** rejected under 35 USC § 103:

12.1. Applicant's arguments have been fully considered and are persuasive. However, upon further search, the amended limitation was clearly and unmistakably found, and consequently, a new rejection has been made.

13. Regarding **independent claims 98, 101 and 104** rejected under 35 USC § 103:

13.1. Applicant's arguments have been fully considered, but are not persuasive, as follows. Accordingly, the rejections are maintained.

13.2. The Applicant argues:

13.2.1. Watson, Lobley, and Eckenrode, alone or in combination, do not disclose or suggest, "determining a measurement criteria score for each of the plurality of remanufacturing options based on the determined weight and the determined rating" as recited in claims 98 and 104 or "determining a measurement criteria score for each of the plurality of remanufacturing options based on the determined weight and the determined rating" as recited in claim 101.

13.2.1.1. The Examiner respectfully replies:

13.2.1.2. Applicant's arguments appear to be a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims distinguishes them from the references.

13.3. The Applicant argues:

As the Office has acknowledged, Watson does not teach: determining a weight for each of a plurality of measurement criteria; determining a rating for each of the plurality of remanufacturing options for each of the plurality of measurement criteria; determining a measurement criteria score for each of the plurality of remanufacturing options based on the determined weight and the determined rating; or determining a total score for each of the remanufacturing options based on the determined measurement criteria scores for each of the plurality of remanufacturing options, wherein an optimal one of the remanufacturing options has the highest score. Contrary to the Office's assertions there is no motivation to combine Watson with Lobley as suggested by the Office. The Office has cited to col. 1, lines 19-36 in Lobley which states:

> Decision support systems are well known. Typically, such systems are implemented on general or special purpose computer hardware and employ a multi criteria model including a system of weights for various factors of interest to the decision. When an alternative (possible decision) is considered, an appropriate score is assigned to each factor in the model, the score representing how well the alternative being considered meets the criteria defined for the respective factor. When all factors have been scored for an alternative, a weighted average is calculated for that alternative. When weighted averages have been calculated for each alternative, the weighted averages of the alternatives are compared and the decision support system typically presents the alternatives ranked by their weighted averages, with the alternative with the highest weighted average being indicated as the most preferred.

and to col. 2, lines 28-35 in Lobley which states:

> It is an object of the present invention to provide a novel decision support system and method which obviates or mitigates at least some of the above-mentioned disadvantages of the prior art. It is a further object of the present invention to provide a novel article of manufacture which obviates or mitigates at least one of the above-mentioned disadvantages of the prior art

Neither of these passages in Lobley makes any mention or suggestion of use of a decision support system for remanufacturing options or even for maintenance options and as noted in Applicants previous response the latter paragraph is merely a generic boilerplate paragraph which provides no meaningful information. Additionally, Applicants have conducted a word search throughout the entire text of Lobley and there is no mention or suggestion of using the decision support system for remanufacturing options or even for maintenance options. As a result, the Office has not provided any support for a motivation to one of ordinary skill in the art to take the particular aspects of the disclosure in Lobley and combine it in the asset management system taught by Watson. It is only through impermissible hindsight after reviewing the above-identified patent application, that the Office is now trying to combine the teachings of these references.

13.3.1.1. The Examiner respectfully replies:

13.3.1.2. Although Lobley contains no mention or suggestion of using the decision support system for remanufacturing options or even for maintenance options, the motivation to use the art of Lobley with the art of Watson is still valid because 1) Watson contains the art of decision support (**refer to Watson, Abstract**), and Lobley is directed to decision support, and 2) Lobley provides motivation at least in the form of an improved indication of an appropriate alternative to select (**column 2, lines 21 - 26**). The motivations recited in the Office Action would have been recognized by the ordinary artisan as benefits that would result in reduced costs.

Claim Objections

14. Claim 23 is objected to for the following minor informalities:

14.1. The claim recites in line 3, "of **he** obtained". For the purpose of claim examination, "he" is interpreted as "the".

Claim Rejections - 35 USC § 112

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claims 101 - 103 and 110 - 115 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

16.1. Regarding claims 110 - 115, the claims recite, "a filter to the determined functional hierarchy to a first hierarchy level". The Examiner cannot reliably determine the meaning of the phrase. For the purpose of claim examination, the phrase is interpreted as, "a filter to the determined functional hierarchy limiting the functional hierarchy to a specified level of the functional hierarchy". The recited interpretation also requires that the phrase, "first filtered hierarchy level" be interpreted as, "specified filtered hierarchy level".

16.2. Regarding claim 101, the claims recite in lines 2 - 3, "the at least one computing device". The term appears to have insufficient antecedent basis. For the purpose of claim examination, the phrase is interpreted as "at least one computing device". Correction or amendment is required.

16.3. Claims 102 - 103 are rejected based on their dependency on their respective intermediate and parent claims which are rejected under 35 U.S.C. 112, second paragraph.

Claim Rejections - 35 USC § 101

17. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

18. **Claims 39 - 58** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims appear to contain abstract ideas such as determining a risk priority, and therefore, the claims must be directed to a practical application having a useful, tangible

and concrete result. The claims appear to lack a tangible result to support a practical application. If supported by the specification, the Examiner suggests displaying the one or more identified viable remanufacturing options.

19. **Claims 72 - 84** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim appears to be directed to a system that is entirely software (functional descriptive material), and therefore, the functionality of the system cannot be realized. The Examiner suggests amending the claim in the spirit of including a processor that is functionally integrated with the software in order to allow the functionality of the software to be realized.

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

21. Claims **1 - 2, 4, 7, 11, 13 - 18, 20 – 22, 26, 29, 31 – 36, 38 - 40, 42, 45, 49, 51 – 56 and 58** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson (U.S. Patent 6,581,045) in view of Onodera (Onodera, Katsushige; "Effective Techniques of FMEA at Each Life-Cycle Stage", 1997, Proceedings of the Annual Reliability and Maintainability Symposium), further in view of Moore (U.S. Patent 5,877,961).

21.1. **Regarding claims 1, 21 and 39,** Watson teaches:

21.1.1. A system and method for assessing remanufacturability of one or more items in an apparatus **(Title; and Abstract; and column 2, lines 27 – 58; and column 4, lines 35 – 40; and column 6, lines 5 – 17 and 49 - 60).**

21.1.2. A computer readable medium having stored thereon instructions which when executed by at least one processor perform steps **(figures 12 and 13).**

21.1.3. software in at least one computing device **(figures 12 – 13, and columns 21 - 22).**

21.1.4. Determining an overall condition of items in an apparatus regardless of the condition of each of the items based on obtained data **(column 3, lines 32 - 50; and column 5, lines 55 - 67; and column 6, lines 1 - 17 and 29 - 45)**.

21.1.5. Determining whether each of the items satisfies one or more operation specifications based on the obtained data **(column 3, lines 32 - 50; and column 4, lines 13 - 20; and column 8, lines 40 - 47; especially the performance estimate factor)**.

21.1.6. Assessing a plurality of remanufacturing options for each of the items based on the determined overall conditions of the items regardless of a condition of each of the items for each of the items to identify which of the plurality of remanufacturing options are viable **(column 4, lines 35 - 42; and column 5, lines 55 - 67; and column 6, lines 8 - 18; and column 9, lines 5 - 48, especially lines 44 - 48)**.

21.2. **Regarding claims 1, 21 and 39**, Watson does not specifically teach:

21.2.1. Determining a risk priority of each of the items based on the obtained data.

21.2.2. Assessing a plurality of remanufacturing options for each of the items based on the determined overall conditions, ***and the determined risk priority*** for each of the items to identify which of the plurality of remanufacturing options are viable.

21.2.3. displaying one or more of the identified, viable remanufacturing options.

21.3. **Regarding claims 1, 21 and 39**, Onodera teaches:

21.3.1. Determining a risk priority of each of the items based on the obtained data **(pages 54 - 55, sections 5, 5.1, and 5.2)**.

21.3.2. Assessing a plurality of remanufacturing options for each of the items based on the determined risk priority for each of the items to identify which of the plurality of remanufacturing options are viable **(pages 54 - 55, sections 5, 5.1, and 5.2; especially section 5.2, second paragraph regarding analyses of maintenance)**.

21.4. **Regarding claims 1, 21 and 39**, Moore teaches:

21.4.1. displaying one or more of the identified, viable remanufacturing options **(figure 10, remanufacturing options beneath the caption <ADD NEW ITEM>)**.

21.5. The motivation to use the art of Moore with the art of Watson would have been the benefit recited in Moore that the invention provides more economic, more efficient, and higher quality control over repairs **(column 1, lines 16 - 25)**.

21.6. The motivation to use the art of Onodera with the art of Watson would have been the statement recited in Onodera that the RPN approach is used in analyses of maintenance efforts **(page 55, section 5.2)**, and that Failure Mode and Effects Analysis is especially useful in maintainability

analyses (**page 50, section Summary & Conclusions, first paragraph**), and further, that Failure Mode and Effects Analysis is useful in diagnosis of degradation of equipment (**page 54, section 4.5**). Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Onodera and Moore with the art of Watson to produce the claimed invention.

21.7. **Regarding claims 2, 22 and 40**, Watson teaches:

21.7.1. Collecting the obtained data on the items (**column 7, lines 15 - 20; and column 18, lines 31 - 44**).

21.8. **Regarding claims 4 and 42**, Watson teaches:

21.8.1. Determining what types of the obtained data need to be collected (**column 19, line 21 - 35; it would have been obvious that data such as year constructed would have been determined as a type of data required to be collected**).

21.9. **Regarding claims 7, 26 and 45**, Watson teaches:

21.9.1. Determining an overall condition of each of the items further comprises assessing of one or more physical conditions for each of the items, wherein the overall condition of each of the items is based on the assessed physical conditions of the item (**column 3, lines 32 - 50; ; and column 6, lines 39 - 60**).

21.10. **Regarding claims 11, 29 and 49**, Watson does not specifically teach:

21.10.1. Determining one or more failure modes for each of the items.

21.10.2. Determining one or more causes for each of the failure modes.

21.10.3. Determining one or more effects of each of the failure modes.

21.10.4. Determining a severity rating for each of the effects.

21.10.5. Determining an occurrence rating for each of the effects, wherein the risk priority is derived from the severity rating and the occurrence rating for each of the causes.

21.11. **Regarding claims 11, 29 and 49**, Onodera teaches:

21.11.1. Determining one or more failure modes for each of the items (**page 52, section 4.1, second paragraph, items a and c; and page 52, table 1, columns 1 and 3**).

21.11.2. Determining one or more causes for each of the failure modes (**page 52, section 4.1, second paragraph, items a and d; and page 52, table 1, columns 1 and 4**).

21.11.3. Determining one or more effects of each of the failure modes (**page 52, section 4.1, second paragraph, items a and e; and page 52, table 1, columns 1 and 5**).

21.11.4. Determining a severity rating for each of the effects (**page 55, table 8 and section 5.2**).

21.11.5. Determining an occurrence rating for each of the effects **(page 55, table 9 and section 5.2)**, wherein the risk priority is derived from the severity rating and the occurrence rating for each of the causes **(page 55, section 5.2)**.

21.12. **Regarding claims 13, 31 and 51,** Watson teaches:

21.12.1. That the remanufacturing options comprise a restore option and a replace option **(Abstract)**.

21.13. **Regarding claims 14, 32 and 52,** Watson teaches:

21.13.1. Identifying which of the plurality of remanufacturing options identified as viable is optimal **(column 6, lines 6 - 17)**.

21.14. **Regarding claims 14, 32 and 52,** Watson does not specifically teach:

21.14.1. displaying the identified, optimal remanufacturing option.

21.15. **Regarding claims 14, 32 and 52,** Moore appears to teach:

21.15.1. displaying the identified, optimal remanufacturing option (**figure 10, remanufacturing options beneath the caption <ADD NEW ITEM>**).

21.16. **Regarding claims 15, 33 and 53,** Watson teaches:

21.16.1. Obtaining cost data on each of the remanufacturing options for each of the items **(figure 1, item 158; and column 2, lines 19 - 41; and column 4, lines 55 - 59)**.

21.17. **Regarding claims 16, 34 and 54,** Watson teaches:

21.17.1. Reassessing the plurality of remanufacturing options for each of the items based on the assessing of the plurality of the remanufacturing options and the obtained cost **(column 6, lines 7 - 17)**.

21.18. **Regarding claims 17, 35 and 55,** Watson teaches:

21.18.1. Analyzing the value of each of the remanufacturing options based on two or more factors **(figure 17; and column 25, lines 19 - 42)**.

21.19. **Regarding claims 18, 36 and 56,** Watson teaches:

21.19.1. At least one of the factors is a cost for each of the remanufacturing options **(figure 17; and column 25, lines 19 - 42)**.

21.20. **Regarding claims 20, 38 and 58,** Watson teaches:

21.20.1. Analyzing an economic cost for at least one of the viable remanufacturing options **(column 6, lines 6 - 17; and column 9, lines 42 - 60)**.

==========

22. **Claims 3, 23 and 41** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson as modified by Onodera and Moore as applied to claims **1 - 2, 4, 7, 11, 13 - 18, 20 - 22, 26, 29, 31 - 36, 38 - 40, 42, 45, 49, 51 - 56 and 58** above, further in view of common knowledge in the art.

22.1. Watson as modified by Onodera and Moore teaches a method and system for assessing remanufacturability of one or more items in an apparatus, as recited in claims **1 - 2, 4, 7, 11, 13 - 18, 20 - 22, 26, 29, 31 - 36, 38 - 40, 42, 45, 49, 51 - 56 and 58** above.

22.2. **Regarding claims 3 and 41**, Watson teaches:

22.2.1. Obtaining at least a portion of the data from stored information on the items **(figure 1, element 134; and column 8, lines 58 - 64; and column 24, lines 46 - 50)**.

22.2.2. Examining the items to obtain at least a portion of the data **(column 7, lines 15 - 20)**.

22.3. **Regarding claims 3 and 41**, Watson does not specifically teach:

22.3.1. Researching the items to obtain at least a portion of the data.

22.4. **Regarding claim 23**, Watson teaches:

22.4.1. Determining what types of the obtained data need to be collected **(column 19, line 21 - 35; it would have been obvious that data such as year constructed would have been determined as a type of data required to be collected)**.

22.4.2. another portion of the obtained data is from evaluating each of the items **(column 7, lines 15 - 20)**.

22.5. **Regarding claim 23**, Watson does not specifically teach:

22.5.1. at least a portion of he obtained data is obtained by researching the items.

22.6. **Regarding claims 3, 23 and 41**, Official Notice is taken that it was old and well known to the ordinary artisan at the time of invention to research data for an item. The motivation to combine would have been the knowledge of the ordinary artisan of the need to obtain data needed to evaluate alternatives and make a decision regarding remanufacturing options.

22.7. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use common knowledge in the art with the art of Watson as modified by Onodera and Moore to produce the claimed invention.

==========

23. **Claims 5 - 6, 12, 24 - 25, 30, 43 - 44 and 50** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson as modified by Onodera and Moore as applied to claims **1 - 2, 4, 7, 11, 13 - 18, 20 - 22, 26, 29, 31 - 36, 38 - 40, 42, 45, 49, 51 - 56 and 58** above, further in view of MilStd1629A (MIL-STD-1629A, "Military Standard procedures for performing a failure mode, effects and criticality analysis", 24 November 1980).

23.1. Watson as modified by Onodera and Moore teaches a method and system for assessing remanufacturability of one or more items in an apparatus, as recited in claims **1 - 2, 4, 7, 11, 13 - 18, 20 - 22, 26, 29, 31 - 36, 38 - 40, 42, 45, 49, 51 - 56 and 58** above.

23.2. **Regarding claims 5, 24 and 43**, Watson teaches:

23.2.1. Identifying one or more systems in the apparatus (**column 2, line 67; and column 3, lines 1 - 5; and column 2, lines 41 - 54**).

23.2.2. Identifying components in each of the systems (**column 2, line 67; and column 3, lines 1 - 5; and column 2, lines 41 - 54**).

23.2.3. Assessing a viability of a plurality of remanufacturing options for each of the items is based on the system and components (**column 2, line 67; and column 3, lines 1 - 5; and column 2, lines 41 - 54; and column 6, lines 29 - 35; and column 26, lines 32 - 44**).

23.3. **Regarding claims 5, 24 and 43**, Watson does not specifically teach:

23.3.1. Determining a functional hierarchy and interrelation of the systems and components, wherein assessing a viability of a plurality of remanufacturing options for each of the items is *also* based on *the functional hierarchy and interrelation of* the system and components.

23.4. **Regarding claims 5, 24 and 43**, MilStd1629A teaches:

23.4.1. Determining a functional hierarchy and interrelation of the systems and components (**page 101-9, figure 101-1 Example of a functional block diagram**)

23.5. The motivation to use the art of MilStd1629A with the art of Watson as modified by Onodera and Moore would have been obvious given the statement in MilStd1629A that its use is called for in maintainability and maintenance plan analysis (**page iii, Foreword, last paragraph**), and it use in maintenance requirements (**section 1. SCOPE, paragraph 1.1**). Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of MilStd1629A with the art of Watson as modified by Onodera and Moore to produce the claimed invention.

23.6. **Regarding claims 6, 25 and 44**, Watson does not specifically teach:

23.6.1. Identifying one or more subsystems, wherein the determining a functional hierarchy and interrelation determines the functional hierarchy and interrelation of the systems, subsystems and components, wherein the assessing a viability of a plurality of remanufacturing options for each of the items is also based on the functional hierarchy and interrelation of the systems, subsystems and components.

23.7. **Regarding claims 6, 25 and 44**, MilStd1629A teaches:

23.7.1. Identifying one or more subsystems, wherein the determining a functional hierarchy and interrelation determines the functional hierarchy and interrelation of the systems, subsystems and components **(page 103-4, figure 103.1 Example of FMECA- maintainability information worksheet format, upper left quadrant, elements SYSTEM/SUBSYSTEM DESCRIPTION and SYSTEM/SUBSYSTEM NOMENCLATURE; and page 101-9, figure 101-1 Example of a functional block diagram)**.

23.8. **Regarding claims 12, 30, and 50**, Watson does not specifically teach:

23.8.1. The effects comprise a local effect, a secondary effect, and an ultimate effect.

23.9. **Regarding claims 12, 30, and 50**, MilStd1629A teaches:

23.10. The effects comprise a local effect, a secondary effect, and an ultimate effect **(page 4, sections 3.1.13, 3.1.13.1, 3.1.13.2, 3.1.13.3)**.

24. **Claims 8 - 9, 27 - 28 and 46 - 47** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson as modified by Onodera and Moore as applied to claims **1 - 2, 4, 7, 11, 13 - 18, 20 - 22, 26, 29, 31 - 36, 38 - 40, 42, 45, 49, 51 - 56 and 58** above, further in view of Busch (U.S. Patent 6,052,631).

24.1. Watson as modified by Onodera and Moore teaches a method and system for assessing remanufacturability of one or more items in an apparatus, as recited in claims **1 - 2, 4, 7, 11, 13 - 18, 20 - 22, 26, 29, 31 - 36, 38 - 40, 42, 45, 49, 51 - 56 and 58** above.

24.2. **Regarding claims 8, 27 and 46**, Watson does not specifically teach:

24.2.1. Determining one or more component functions associated with each component.

24.2.2. Determining one or more manufacturing standards for each of the components, wherein the operations specifications comprise the component functions and the manufacturing standards.

24.3. **Regarding claims 8, 27 and 46**, Onodera teaches:

24.3.1. Determining one or more component functions associated with each component **(page 52, section 4.1, paragraph 2, items labeled a and b)**.

24.4. **Regarding claims 8, 27 and 46,** Busch teaches:

24.4.1. Determining one or more manufacturing standards for each of the components (**figure 13, element 1302; and figure 15, element 1504; and column 6, lines 14 - 22**).

24.5. The motivation to use the art of Busch with the art of Watson as modified by Onodera and Moore would have been obvious given the benefit recited in Busch that the invention facilitates inspection of a vehicle to detect the presence of prior damage (**column 2, lines 14 - 19**), which would have been of value in analyzing the condition of the asset and evaluating repair/replacement options recited in Watson (**Title**). Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Busch with the art of Watson as modified by Onodera and Moore to produce the claimed invention.

24.6. **Regarding claims 9, 28 and 47,** Watson teaches:

24.6.1. Identifying one or more systems in the apparatus, each of the systems comprising one or more components (**column 2, line 67; and column 3, lines 1 - 5; and column 2, lines 41 - 54**).

24.6.2. Identifying one or more systems functions for each of the systems, wherein the operations specifications also comprise the component system functions (**column 2, lines 41 - 54**).

25. **Claims 10 and 48** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson as modified by Onodera, Moore, and Busch as applied to claims **8 - 9, 27 - 28 and 46 - 47** above, further in view of common knowledge in the art.

25.1. Watson as modified by Onodera, Moore and Busch teaches a method and system for assessing remanufacturability of one or more items in an apparatus, as recited in claims **8 - 9, 27 - 28 and 46 - 47** above.

25.2. **Regarding claims 10 and 48,** Watson teaches:

25.2.1. Obtaining at least a portion of the standards from stored information on each of the components (**figure 1, element 134; and column 8, lines 58 - 64; and column 24, lines 46 - 50**).

25.3. **Regarding claims 10 and 48,** Watson does not specifically teach:

25.3.1. Obtaining at least a portion of the ***manufacturing*** standards from stored information on each of the components.

25.3.2. Researching each of the components to obtain at least a portion of the manufacturing standards.

25.4. **Regarding claims 10 and 48,** Busch teaches:

25.4.1. Obtaining manufacturing standards **(figure 13, element 1302; and figure 15, element 1504; and column 6, lines 14 - 22)**.

25.5. **Regarding claims 10 and 48**, Official Notice is taken that it was old and well known in the art at the time of invention to research data for an item. The motivation to combine would have been the knowledge of the ordinary artisan of the need to obtain data needed to evaluate alternatives and make a decision regarding remanufacturing options. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use common knowledge in the art with the art of Watson as modified by Onodera, Moore and Busch to produce the claimed invention.

==========

26. **Claims 19, 37 and 57** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson as modified by Onodera and Moore as applied to claims **1 - 2, 4, 7, 11, 13 - 18, 20 - 22, 26, 29, 31 - 36, 38 - 40, 42, 45, 49, 51 - 56 and 58** above, further in view of Lobley (U.S. Patent 6,151,565).

26.1. Watson as modified by Onodera and Moore teaches a method and system for assessing remanufacturability of one or more items in an apparatus, as recited in claims **1 - 2, 4, 7, 11, 13 - 18, 20 - 22, 26, 29, 31 - 36, 38 - 40, 42, 45, 49, 51 - 56 and 58** above.

26.2. The art of Watson and the art of Lobley are analogous art because they both contain the art of decision support **(Watson, in the Abstract; and Lobley, title of patent)**.

26.3. **Regarding claims 19, 37 and 57**, Watson teaches:

26.3.1. A plurality of measurement criteria **(column 5, lines 65 - 67 and column 6, lines 1 - 5; column 8, lines 1 - 4)**

26.3.2. A plurality of remanufacturing options **(Title; Abstract; and column 2, lines 41 - 58; and column 6, lines 6 - 17)**.

26.4. **Regarding claims 19, 37 and 57**, Watson does not specifically teach:

26.4.1. *Determining a weight for each of* a plurality of measurement criteria.

26.4.2. *Rating each of the* remanufacturing *options for each of* the plurality of measurement criteria.

26.4.3. *Determining a total score for each of the* remanufacturing options *based on the weight and the scoring, wherein an optimal one* of the remanufacturing options *has the highest score*.

26.5. **Regarding claims 19, 37 and 57**, Lobley teaches:

26.5.1. Determining a weight for each of a plurality of measurement criteria **(figure 6, columns labeled Factor and Weight; and column 3, lines 28 - 50; and column 7, lines 33 - 51)**.

26.5.2. Rating each of the remanufacturing options for each of the plurality of measurement criteria (**figure 6, section labeled Standards; and column 3, lines 28 - 50; and column 7, lines 33 - 51**).

26.5.3. Determining a total score for each of the remanufacturing options based on the weight and the scoring, wherein an optimal one of the remanufacturing options has the highest score (**column 7, lines 33 - 51; and column 1, lines 19 - 36**).

26.6. The motivation to use the art of Lobley with the art of Watson as modified by Onodera and Moore would have been the benefit recited in Lobley that a decision support system provides a method for determining the most preferred alternative of several possible alternatives (**paraphrased from column 1, lines 19 - 36**), and further that the Lobley method obviates or mitigates at least some disadvantages of the prior art (**column 2, lines 28 - 35**). Further, Lobley recites the benefit of an improved indication of an appropriate alternative to select (**column 2, lines 21 - 26**). The items recited would have been recognized by the ordinary artisan as benefits that would reduce costs. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Lobley with the art of Watson as modified by Onodera and Moore to produce the claimed invention.

==========

27. **Claims 107 - 109** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson as modified by Onodera and Moore as applied to claims **1 - 2, 4, 7, 11, 13 - 18, 20 - 22, 26, 29, 31 - 36, 38 - 40, 42, 45, 49, 51 - 56 and 58** above, further in view of Partridge (U.S. Patent No. 6,397,992).

27.1. Watson as modified by Onodera and Moore teaches a method and system for assessing remanufacturability of one or more items in an apparatus, as recited in claims **1 - 2, 4, 7, 11, 13 - 18, 20 - 22, 26, 29, 31 - 36, 38 - 40, 42, 45, 49, 51 - 56 and 58** above.

27.2. **Regarding claims 107 - 109**, Watson does not specifically teach:

27.2.1. assessing whether one of the remanufacturing options is an upgrade that replaces two or more items with a smaller set of items.

27.3. **Regarding claims 107 - 109**, Partridge appears to teach:

27.3.1. an upgrade that replaces two or more items with a smaller set of items (**column 1, lines 35 - 41**).

27.4. The motivation to use the art of Partridge with the art of Watson as modified by Onodera and Moore would have been the benefit recited in Partridge that the invention reduces the costs of manufacture (**column 1, lines 40 - 45**).

27.5. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Partridge with the art of Watson as modified by Onodera and Moore to produce the claimed invention.

==========

28. Claims **59 - 62, 70 - 75, 83 - 88 and 96 - 97** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson (U.S. Patent 6,581,045) in view of Moore (U.S. Patent 5,877,961).

28.1. **Regarding claims 59 and 85**, Watson teaches:

28.1.1. A method for assessing remanufacturability of one or more items in an apparatus (**Title; and Abstract; and column 2, lines 27 - 58; and column 4, lines 35 - 40; and column 6, lines 5 - 17 and 49 - 60**).

28.1.2. A computer readable medium having stored thereon instructions which when executed by at least one processor perform steps (**figures 12 and 13; especially figure 12, element 280**).

28.1.3. Obtaining one or more assessments of the one or more items regardless of a condition of each item (**column 3, lines 32 - 50; and column 5, lines 55 - 67; and column 6, lines 1 - 17 and 29 - 45**).

28.1.4. Assessing a plurality of remanufacturing options for each of the items regardless of the condition of each of the items based on the one or more assessments to identify which of the plurality of remanufacturing options are viable (**column 4, lines 35 - 42; and column 5, lines 55 - 67; and column 6, lines 8 - 18; and column 9, lines 5 - 48, especially lines 44 - 48**).

28.2. **Regarding claims 59 and 85**, Watson does not specifically teach:

28.2.1. displaying one or more of the identified, viable remanufacturing options.

28.3. **Regarding claims 59 and 85**, Moore teaches:

28.3.1. displaying one or more of the identified, viable remanufacturing options (**figure 10, remanufacturing options beneath the caption <ADD NEW ITEM>**).

28.4. The motivation to use the art of Moore with the art of Watson would have been the benefit recited in Moore that the invention provides more economic, more efficient, and higher quality control over repairs (**column 1, lines 16 - 25**).

28.5. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Moore with the art of Watson to produce the claimed invention.

==========

28.6. **Regarding claim 72**, Watson teaches:

28.6.1. A system for assessing remanufacturability of one or more items in an apparatus (**Title; and Abstract; and column 2, lines 27 - 58; and column 4, lines 35 - 40; and column 6, lines 5 - 17 and 49 - 60**).

28.6.2. An item assessment processing system that obtains one or more assessments of the one or more items regardless of a condition of each item (**column 3, lines 32 - 50; and column 5, lines 55 - 67; and column 6, lines 1 - 17 and 29 - 45**).

28.6.3. A remanufacturing assessment system that assesses a plurality of remanufacturing options for each of the items regardless of the condition of each of the items based on the obtained one or more assessments to identify which of the plurality of remanufacturing options are viable (**column 4, lines 35 - 42; and column 5, lines 55 - 67; and column 6, lines 8 - 18; and column 9, lines 5 - 48, especially lines 44 - 48**).

28.7. **Regarding claim 72**, Watson does not specifically teach:

28.7.1. displaying one or more of the identified, viable remanufacturing options.

28.8. **Regarding claim 72**, Moore teaches:

28.9. displaying one or more of the identified, viable remanufacturing options (<u>figure 10, remanufacturing options beneath the caption <ADD NEW ITEM></u>).

28.10. The motivation to use the art of Moore with the art of Watson would have been the benefit recited in Moore that the invention provides more economic, more efficient, and higher quality control over repairs (**column 1, lines 16 - 25**).

28.11. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Moore with the art of Watson to produce the claimed invention.

==========

28.12. **Regarding claims 60, 73 and 86**, Watson teaches:

28.12.1. Determining the overall condition of each of the items based on obtained data (**column 3, lines 32 - 50; and column 5, lines 55 - 67; and column 6, lines 1 - 17 and 29 - 45**).

28.13. **Regarding claims 61, 74 and 87**, Watson teaches:

28.13.1. Determining an overall condition of each of the items further comprises obtaining assessments of one or more physical conditions for each of the items, wherein the overall

condition of each of the items is based on the assessed physical conditions of the item (**column 3, lines 32 - 50; and column 6, lines 39 - 60**).

28.14. **Regarding claims 62, 75 and 88**, Watson teaches:

28.14.1. Determining whether each of the items satisfies one or more operation specifications based on the obtained data (**column 3, lines 32 - 50; and column 4, lines 13 - 20; and column 8, lines 40 - 47; especially the performance estimate factor**).

28.15. **Regarding claims 70, 83 and 96**, Watson teaches:

28.15.1. That the remanufacturing options comprise a restore option and a replace option (**Abstract**).

28.16. **Regarding claims 71, 84 and 97**, Watson teaches:

28.16.1. Identifying which of the plurality of remanufacturing options identified as viable is optimal (**column 6, lines 6 - 17**).

28.17. **Regarding claims 71, 84 and 97**, Watson does not specifically teach:

28.17.1. displaying the identified, optimal remanufacturing option.

28.18. **Regarding claims 71, 84 and 97**, Moore appears to teach:

28.19. displaying the identified, optimal remanufacturing option (**figure 10, remanufacturing options beneath the caption <ADD NEW ITEM>**).

==========

29. **Claims 63 - 64, 76 - 77 and 89 - 90** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson as modified by Moore as applied to claims **59 - 62, 70 - 75, 83 - 88 and 96 - 97 above**, further in view of Onodera (Onodera, Katsushige; "Effective Techniques of FMEA at Each Life-Cycle Stage", 1997, Proceedings of the Annual Reliability and Maintainability Symposium), further in view of Busch (U.S. Patent 6,052,631).

29.1. Watson as modified by Moore teaches the system for remanufacturing items in an apparatus as recited in claims **59 - 62, 72 - 75 and 85 - 88 above.**

29.2. **Regarding claims 63, 76 and 89**, Watson does not specifically teach:

29.2.1. Determining one or more component functions associated with each component.

29.2.2. Determining one or more manufacturing standards for each of the components, wherein the operations specifications comprise the component functions and the manufacturing standards.

29.3. **Regarding claims 63, 76 and 89**, Onodera teaches:

29.3.1. Determining one or more component functions associated with each component (**page 52, section 4.1, paragraph 2, items labeled a and b**).

29.4. **Regarding claims 63, 76 and 89**, Busch teaches:

29.4.1. Determining one or more manufacturing standards for each of the components (**figure 13, element 1302; and figure 15, element 1504; and column 6, lines 14 - 22**).

29.5. The motivation to use the art of Busch with the art of Watson would have been obvious given the benefit recited in Busch that the invention facilitates inspection of a vehicle to detect the presence of prior damage (**column 2, lines 14 - 19**), which would have been of value in analyzing the condition of the asset and evaluating repair/replacement options recited in Watson (**Title**).

29.6. The motivation to use the art of Onodera with the art of Watson would have been the statement recited in Onodera that the RPN approach is used in analyses of maintenance efforts (**page 55, section 5.2**), and that Failure Mode and Effects Analysis is especially useful in maintainability analyses (**page 50, section Summary & Conclusions, first paragraph**), and further, that Failure Mode and Effects Analysis is useful in diagnosis of degradation of equipment (**page 54, section 4.5**).

29.7. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Onodera and the art of Busch with the art of Watson as modified by Moore to produce the claimed invention.

29.8. **Regarding claims 64, 77 and 90**, Watson teaches:

29.8.1. Identifying one or more systems in the apparatus, each of the systems comprising one or more components (**column 2, line 67; and column 3, lines 1 - 5; and column 2, lines 41 - 54**).

29.8.2. Identifying one or more systems functions for each of the systems, wherein the operations specifications also comprise the component system functions (**column 2, lines 41 - 54**).

==========

30. **Claims 65 - 66, 78 - 79 and 91 - 92** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson as modified by Moore as applied to claims **59 - 62, 70 - 75, 83 - 88 and 96 - 97 above**, further in view of Onodera (Onodera, Katsushige; "Effective Techniques of FMEA at Each Life-Cycle Stage", 1997, Proceedings of the Annual Reliability and Maintainability Symposium).

30.1. Watson as modified by Moore teaches the system for remanufacturing items in an apparatus as recited in claims **59 - 62, 70 - 75, 83 - 88 and 96 - 97** above.

30.2. **Regarding claim 65, 78 and 91**, Watson does not specifically teach:

30.2.1. Obtaining one or more assessments comprises determining a risk priority of each of the items based on the obtained data.

30.3. **Regarding claims 65, 78 and 91,** Onodera teaches:

30.4. Obtaining one or more assessments comprises determining a risk priority of each of the items based on the obtained data **(pages 54 – 55, sections 5, 5.1, and 5.2)**.

30.5. The motivation to use the art of Onodera with the art of Watson as modified by Moore would have been the statement recited in Onodera that the RPN approach is used in analyses of maintenance efforts **(page 55, section 5.2)**, and that Failure Mode and Effects Analysis is especially useful in maintainability analyses **(page 50, section Summary & Conclusions, first paragraph)**, and further, that Failure Mode and Effects Analysis is useful in diagnosis of degradation of equipment **(page 54, section 4.5)**.

30.6. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Onodera with the art of Watson as modified by Moore to produce the claimed invention.

30.7. **Regarding claims 66, 79 and 92,** Watson does not specifically teach:

30.7.1. Determining one or more failure modes for each of the items.

30.7.2. Determining one or more causes for each of the failure modes.

30.7.3. Determining one or more effects of each of the failure modes.

30.7.4. Determining a severity rating for each of the effects.

30.7.5. Determining an occurrence rating for each of the effects, wherein the risk priority is derived from the severity rating and the occurrence rating for each of the causes.

30.8. **Regarding claims 66, 79 and 92,** Onodera teaches:

30.8.1. Determining one or more failure modes for each of the items **(page 52, section 4.1, second paragraph, items a and c; and page 52, table 1, columns 1 and 3)**.

30.8.2. Determining one or more causes for each of the failure modes **(page 52, section 4.1, second paragraph, items a and d; and page 52, table 1, columns 1 and 4)**.

30.8.3. Determining one or more effects of each of the failure modes **(page 52, section 4.1, second paragraph, items a and e; and page 52, table 1, columns 1 and 5)**.

30.8.4. Determining a severity rating for each of the effects **(page 55, table 8 and section 5.2)**.

30.8.5. Determining an occurrence rating for each of the effects **(page 55, table 9 and section 5.2)**, wherein the risk priority is derived from the severity rating and the occurrence rating for each of the causes **(page 55, section 5.2)**.

31. **Claims 67, 80 and 93** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson as modified by Moore and Onodera as applied to claims **65 - 66, 78 - 79 and 91 - 92** above, further in view of MilStd1629A (MIL-STD-1629A, "Military Standard procedures for performing a failure mode, effects and criticality analysis", 24 November 1980).

31.1. Watson as modified by Moore and Onodera teaches a method and system for assessing remanufacturability of one or more items in an apparatus, as recited in claims **65 - 66, 78 - 79 and 91 - 92** above.

31.2. **Regarding claims 67, 80 and 93**, Watson does not specifically teach:

31.2.1. The effects comprise a local effect, a secondary effect, and an ultimate effect.

31.3. **Regarding claims 67, 80 and 93**, MilStd1629A teaches:

31.4. The effects comprise a local effect, a secondary effect, and an ultimate effect (**page 4, sections 3.1.13, 3.1.13.1, 3.1.13.2, 3.1.13.3**).

31.5. The motivation to use the art of MilStd1629A with the art of Watson as modified by Moore and Onodera would have been obvious given the statement in MilStd1629A that its use is called for in maintainability and maintenance plan analysis (**page iii, Foreword, last paragraph**), and its use in maintenance requirements (**section 1. SCOPE, paragraph 1.1**). Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of MilStd1629A with the art of Watson as modified by Moore and Onodera to produce the claimed invention.

32. **Claims 68 - 69, 81 - 82 and 94 - 95** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson as modified by Moore as applied to claims **59 - 62, 70 - 75, 83 - 88 and 96 - 97** above, further in view of MilStd1629A.

32.1. Watson as modified by Moore teaches the system for remanufacturing items in an apparatus as recited in claims **59 - 62, 72 - 75 and 85 - 88 above.**

32.2. **Regarding claims 68, 81 and 94**, Watson teaches the limitations taught in claim 5 above.

32.3. **Regarding claims 68, 81 and 94**, Watson does not specifically teach the limitations described in claim 5 above.

32.4. **Regarding claims 68, 81 and 94**, MilStd1629A teaches the limitations taught in claim 5 above.

32.5. The motivation to use the art of MilStd1629A with the art of Watson would have been obvious given the statement in MilStd1629A that its use is called for in maintainability and maintenance plan analysis (**page iii, Foreword, last paragraph**), and it use in maintenance requirements (**section 1. SCOPE, paragraph 1.1**). Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of MilStd1629A with the art of Watson as modified by Moore to produce the claimed invention.

32.6. **Regarding claims 69, 82 and 95**, Watson does not specifically teach:

32.6.1. Identifying one or more subsystems, wherein the determining a functional hierarchy and interrelation determines the functional hierarchy and interrelation of the systems, subsystems and components, wherein the assessing a viability of a plurality of remanufacturing options for each of the items is also based on the functional hierarchy and interrelation of the systems, subsystems and components.

32.7. **Regarding claims 69, 82 and 95**, MilStd1629A teaches

32.7.1. Identifying one or more subsystems, wherein the determining a functional hierarchy and interrelation determines the functional hierarchy and interrelation of the systems, subsystems and components (**page 103-4, figure 103.1 Example of FMECA- maintainability information worksheet format, upper left quadrant, elements SYSTEM/SUBSYSTEM DESCRIPTION and SYSTEM/SUBSYSTEM NOMENCLATURE; and page 101-9, figure 101-1 Example of a functional block diagram**).

==========

33. **Claims 98, 100, 101, 103, 104 and 106** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson (U.S. Patent 6,581,045) in view of Lobley (U.S. Patent 6,151,565).

33.1. The art of Watson and the art of Lobley are analogous art because they both contain the art of decision support (**Watson, in the Abstract; and Lobley, title of patent**).

33.2. **Regarding claims 98, 101 and 104**, Watson teaches:

33.2.1. A method for analyzing a value of a plurality of remanufacturing options (**Title; and Abstract; and column 2, lines 19 - 58; and column 4, lines 35 - 40; and column 6, lines 5 - 17 and 49 - 60**).

33.2.2. A computer readable medium having stored thereon instructions which when executed by at least one processor perform steps **(figures 12 and 13; especially figure 12, element 280)**.

33.2.3. software in at least one computing device **(figures 12 - 13, and columns 21 - 22)**.

33.2.4. A plurality of measurement criteria **(column 5, lines 65 - 67 and column 6, lines 1 - 5; column 8, lines 1 - 4)**

33.2.5. A plurality of remanufacturing options **(Title; Abstract; and column 2, lines 41 - 58; and column 6, lines 6 - 17)**.

33.3. **Regarding claims 98, 101 and 104**, Watson does not specifically teach:

33.3.1. *determining a weight for each of* a plurality of measurement criteria;

33.3.2. *determining a rating for each of* the plurality of remanufacturing options *for each of the plurality of measurement criteria;*

33.3.3. determining a measurement criteria score for each of the plurality of remanufacturing options based on the determined weight and the determined rating; and

33.3.4. determining a total score for each of the remanufacturing options based on the determined measurement criteria scores for each of the plurality of remanufacturing options, wherein an optimal one of the remanufacturing options has the highest score.

33.3.5. displaying the remanufacturing option with the highest score.

33.4. **Regarding claims 98, 101 and 104**, Lobley teaches:

33.4.1. determining a weight for each of a plurality of measurement criteria **(figure 6, columns labeled Factor and Weight; and column 3, lines 28 - 50; and column 7, lines 33 - 51)**.

33.4.2. determining a rating for each of the plurality of options for each of the plurality of measurement criteria **(figure 6, section labeled Standards; and column 3, lines 28 - 50; and column 7, lines 33 - 51)**.

33.4.3. determining a measurement criteria score for each of the plurality of options based on the determined weight and the determined rating **(figure 6, column labeled Score; and column 3, lines 28 - 50; and column 7, lines 33 - 51)**.

33.4.4. determining a total score for each of the options based on the determined measurement criteria scores for each of the plurality of options, wherein an optimal one of the options has the highest score **(column 7, lines 33 - 51; and column 1, lines 19 - 36)**.

33.4.5. displaying the option with the highest score **(figure 7, column Recommendation, element Highest Score)**.

33.5. **Regarding claims 100, 103 and 106**, Watson does not specifically teach:

33.5.1. That determining a measurement criteria score is a product of the determined weight and the determined rating for each of the plurality of measurement criteria for each of the plurality of remanufacturing options.

33.6. **Regarding claims 100, 103 and 106**, Lobley teaches:

33.6.1. That determining a measurement criteria score is a product of the determined weight and the determined rating for each of the plurality of measurement criteria for each of the plurality of options (**figure 6, columns labeled Factor and Weight and Score, and section labeled Standars; and column 3, lines 28 - 50; and column 7, lines 33 - 51**).

33.7. The motivation to use the art of Lobley with the art of Watson would have been the benefit recited in Lobley that a decision support system provides a method for determining the most preferred alternative of several possible alternatives (**paraphrased from column 1, lines 19 - 36**), and further that the Lobley method obviates or mitigates at least some disadvantages of the prior art (**column 2, lines 28 - 35**). Further, Lobley recites the benefit of an improved indication of an appropriate alternative to select (**column 2, lines 21 - 26**). The items recited would have been recognized by the ordinary artisan as benefits that would reduce costs.

33.8. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Lobley with the art of Watson to produce the claimed invention.

34. **Claims 99, 102 and 105** are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson as modified by Lobley as applied to claims **98, 100, 101, 103, 104 and 106** above, further in view of Eckenrode (Eckenrode, Robert T.; "Weighting multiple criteria", **1965**, Management Science, Volume 12, Number 3).

34.1. Watson as modified by Lobley teaches analyzing a value of a plurality of remanufacturing options as recited in claims **98, 100, 101, 103, 104 and 106** above.

34.2. Watson, Lobley and Eckenrode are analogous art because they all contain the art of decision support (**Watson, in the Abstract; and Lobley, title of patent; Eckenrode, page 180, section Introduction**).

34.3. **Regarding claims 99, 102 and 105**, Eckenrode teaches the use of a paired comparison method to determine weights for criteria (page 181, last paragraph; and page 182, figure 2; and page 184, paragraph labeled 3. The Three Paired Comparisons Methods).

34.4. The motivation to use the art of Eckenrode with the art of Watson as modified by Lobley would have been the benefit of identifying efficient and reliable methods for collecting data on

human judgements (**page 180, section Introduction**), which would have been recognized by the ordinary artisan as a benefit to produce improved decisions. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Eckenrode with the art of Watson as modified by Lobley to produce the claimed invention.

35. **Examiner's Note:** Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

Allowable Subject Matter

36. Claims 110 - 115 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

37. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russ Guill whose telephone number is 571-272-7955. The examiner can normally be reached on Monday - Friday 10:00 AM - 6:30 PM.
38. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the status of this application should be directed to the TC2100 Group Receptionist: 571-272-2100.
39. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Russ Guill
Examiner
Art Unit 2123

RG

PAUL RODRIGUEZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

4/3/06